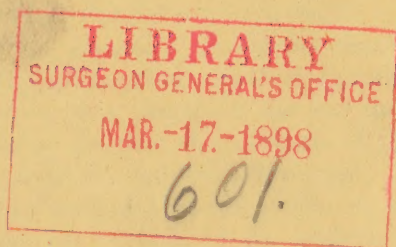


Briggs (Chas S.)

Medio-Bilateral lithotomy.



MEDIO-BILATERAL LITHOTOMY.*

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Operations for the relief of stone in the bladder have undergone a radical change in the last twenty years. In 1878 Bigelow, of Boston, brought the notice of the profession to a new method of crushing stones in the bladder and removing the fragments by aspiration at one sitting. This new procedure, termed by its originator litholopaxy, has, to a certain extent, revolutionized practice in this important branch of surgery. Stone cases, formerly invariably submitted to cutting operations, are now relieved by Bigelow's method. As regards the frequency with which the two methods, cutting and crushing, are now employed in the treatment of vesical calculi, there can be no question but that the latter is considerably in the ascendancy. Surgeons are generally unanimous that in properly selected cases litholopaxy yields the best results as regards life, but, at the same time, recognize the fact that there is a distinct limitation of the field of usefulness of that method. Certain cases of stone are unfit for litholopaxy, as even the warmest advocates of that method will admit; as, for instance, large calculi, very hard calculi of the oxalate variety that resist the breaking force of the best constructed lithotrites, stones lodged in bladders seriously damaged by pathological changes, cases of advanced urethral stricture, encysted stones, greatly hypertrophied prostate gland, etc. There is, on the contrary, no limitation to the cutting operations. Every case of stone in the bladder may be operated upon by one of the several methods, the character of the operation being determined by circumstances. The mortality rate of the opposed procedures does not vary sufficiently to determine that one method is superior to the other.

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The assertion now, not infrequently made, that lithotomy, supplanted by its old rival in modern shape, will sooner or later become an obsolete procedure cannot be true. Granted that the supremacy of lithotomy in the field of stone operations exists no longer, that method of dealing with that class of diseases will always be demanded in certain cases. What cases are best suited to the crushing, and what to the cutting operations must be regulated partly by the circumstances surrounding each individual case, and partly by the predilection of the surgeon. I maintain, therefore, that lithotomy cannot be put aside as a useless surgical procedure. There is no danger of it becoming a "lost art in surgery." A certain class of stone cases can be relieved by no other method. Lithotomy, in one of its forms, will continue to hold an important place among surgical procedures as long as surgery exists. Even the most skillful and pronounced litholopaxist is forced to admit that certain conditions demand the performance of lithotomy. Individually, my preference is for lithotomy in nearly all cases requiring surgical interference on the grounds that it is more surgical and that it is not more dangerous to life. Blind surgery is bad surgery, is an axiom that, in my opinion, may be applied to litholopaxy.

In skillful and experienced hands the results of Bigelow's method are all that could be asked in cases suited to that operation. On the contrary, when performed by the general surgeon of limited experience in that operation, more damage is apt to be done than by lithotomy in the same hands. Both methods, however, have come to stay, and no surgeon should pin his faith to either method so exclusively as to cause him to overlook the advantages of the other. That method should be selected which is best suited to the conditions of each individual case. Taking the ground, therefore, that a certain class of stone cases, those not adapted to litholopaxy, fall within the legitimate domain of the lithotomist, let us discuss the merits of the several cutting operations for the removal of vesical calculi. These operations are classified into the supra-pubic and the perineal operations.

The supra-pubic, or the high operation, was first practiced about the middle of the sixteenth century. Few surgical procedures have undergone as many vicissitudes as the supra-pubic.

In its early history it had only a few adherents and soon fell into disuse. Revived by Mercier, and for a while extensively practiced, it again fell into disrepute. In the recent past, under the advocacy of Peterson, Guyon, Dulles and others, it has again become a recognized operation especially well adapted to certain cases of stone. The supra-pubic method should be reserved for all cases of stone too large to be removed by the perineal operations.

Of the perineal operations, lateral lithotomy was first practiced by Pierre Franco in the middle of the sixteenth century, brought into prominence by Frere Jacques in the latter part of the seventeenth century, and perfected by Cheselden in the early part of the eighteenth century, is the operation at the present time most frequently resorted to all over the world. It is claimed for the lateral operation that while it does not fully satisfy anatomical requirements, it offers the best route for the extraction of large stones.

The objections that may be urged against lateral lithotomy are that it affords an indirect route to the bladder, that it involves the necessary division of important anatomical structures, that hemorrhage is sometimes excessive, and that the capsule of the prostate gland is endangered in cases of large calculi. The various central operations were designed to meet these objections, the median raphe being selected as the site of incision, as that line represents the intersection of the muscular structures of the perineum, and is devoid of blood-vessels of troublesome size. The median operation originated in the old Marian operation, practiced in the sixteenth century and long afterwards, but for a long time extinct on account of its great fatality as compared with its rival, the lateral method. The high mortality of this ancient method was due to the small incision necessitating a fatal degree of laceration of the neck of the bladder and the deep portions of the urethra in the extraction of large stones. Allarton, in 1854, revived the median operation, and with an improved technique established it on a firm footing. The improved median operation is peculiarly well suited to cases of small stones, for the removal of which it is an ideal operation. Buchanan modified the median operation by employing a rectangular staff.

Dupuytren's bilateral method of lithotomy represents

another effort to establish a procedure free from the disadvantages of the lateral operation. This operation was first performed by Dupuytren in 1824, and has since been extensively practiced in Europe and in this country, notably in this city by the late Professor Paul F. Eve, whose success as a lithotomist was preëminent, and by the late Professor W. T. Briggs, whose earlier operations for stone were all practiced after this method. The recto-vesical is another plan proposed in which the median incision is continued into the rectum. This operation has very few adherents, and has little to recommend it. Quite a number of modifications of the procedures already mentioned have been suggested and occasionally practiced, but have never been established as standard surgical measures.

In 1829 Civiale devised and practiced the medio-bilateral method of lithotomy. In this operation the advantages of the median and the bilateral are combined without the disadvantages of either. The incision to the staff in the urethra is made in the perineal raphe, while the deeper parts are divided to an equal extent on both sides of the median line. "Nature seems to have purposed the median line for such an operation, for it is merely a fibrous septum formed by the tendinous union of the muscles of the perineum, serving to separate the important structures of the two sides, and permitting the surgeon's knife to reach and open the bladder without wounding any part of great importance." Medio-bilateral lithotomy does not seem to have acquired the favor of surgeons to which it is properly entitled by its merits. Civiale employed the method a great many times with marked success. Sir Henry Thompson operated by the medio-bilateral method in most of the cases he submitted to the knife, and speaks very highly of it. In this country the late Professor W. T. Briggs adopted this method exclusively in the latter part of his life, and reported a series of 174 cases operated on by this method, the series including patients of all ages, with only four deaths. Truly a remarkable record. I have operated by this method on thirty patients, with only one death. In this State and the south quite a number of cases operated on by the medio-bilateral method by graduates of the Medical Department of the University of Nashville have been from time to time reported. Recent text-

books referring to lithotomy barely mention this method, and in numerous instances do not mention it at all. Surely an operation originated by one of the most illustrious surgeons of the nineteenth century, endorsed by Sir Henry Thompson, and practiced in this State to the number of nearly three hundred cases with an unequaled success, deserves a higher place among surgical procedures than it now occupies. In my opinion, medio-bilateral lithotomy is superior to all methods for the removal of calculi through the pelvic outlet.

In every case of stone the surgeon should exercise the most careful discrimination in his choice of method. Litholopaxy in selected cases should be done. The supra-pubic operation is especially demanded in cases where the stone is too large to permit of safe extraction through a perineal incision, or when complicated by an hypertrophied prostate gland; but in all cases suitable to perineal cutting operations, the medio-bilateral operation presents the most advantages, because it satisfies all anatomical requirements, it is the safest, and it affords the most direct route to the bladder. The median operation is unsuitable for large stones, as the passage afforded by it is inadequate, and on that account involves dangerous laceration of important parts. The supplemental bilateral section of the deeper parts in Civiale's method removes this objection. This bilateral section of the parts surrounding the neck of the bladder permits of a more extended incision, and therefore furnishes much more room, with a minimum of danger of exceeding the limits of the capsule of the prostate gland than in the single deep cut made in lateral lithotomy. After incision in the medio-bilateral method the tissues are readily dilatable so that the necessity for a long incision for the extraction of large stones is not so great as is generally imagined.

The principal objection urged against the medio-bilateral operation is that it is not adapted for the removal of large stones. I maintain that as large stones can be removed through the somewhat limited incision of that method as through the rather fallacious incision made in the lateral operation. It will be admitted that the difference in the length of incisions in the two methods is principally in that involving the skin and superficial fascia. The section of the deeper parts can be more extensive in the medio-bilateral than in the lat-

eral, on account of the fact that in the former the cut is made on both sides of the median line, while in the latter it is confined to one side. The superficial parts of the perineum are composed of highly dilatable tissue, the tension of which is maintained by the raphe. If this is divided, the dilatability of the parts becomes very great.

The late Professor W. T. Briggs, in a paper read at a meeting of the Southern Surgical Association at New Orleans in 1893, used the following words: "The relative dilatability of the parts can be well illustrated by a sheet of india-rubber, through which passes a moulded seam, itself inelastic and exerting tension upon the sheet of rubber. If an incision is made in the length of the seam, the dilatability of the section will be as much greater than a transverse or oblique section, as the circumference of a circle is greater than its diameter. It was upon the principle of dilatability of the perineal tissues that Allarton originated the modern median operation, and were the deeper parts as dilatable as the superficial, median lithotomy would be of all methods the most desirable but the deeper parts are capable of only a moderate degree of dilatation. Efforts at forced dilatation in the extraction of large stones inevitably cause laceration. When, however, these parts are incised bilaterally, as in the medio-bilateral method, they yield to dilatation as readily as the more superficial parts. In the matter of dilatation the medio-bilateral possesses a decided advantage over that afforded by the lateral method in that the incision in the former being in the median line of the perineum, dilatation is the same in all directions, while in the latter it is limited on the left by the ramus and tuberosity of the ischium. If the extraction of large stones depended on the length of the cutaneous incision the superiority of the lateral operation would be undisputed, for an incision carried obliquely down from a point a quarter of an inch to the left of the raphe, and an inch or an inch and a half above the anus may be made to a point between the anus and the tuberosity of the ischium to the extent of three and a half inches or more, while in the median operations the incision must necessarily be limited below by the anus and above by the bulb of the urethra, so that between these points an incision not much exceeding an inch and a half can only be made. Fortunately, the flexibility

of the skin and the dilatability of the superficial parts of the perineum render a long skin incision unnecessary. Some of the largest calculi in our collection were removed through an inch and a half skin incision.

The rectum is compressible to the greatest extent, as shown in the passage of the child's head in parturition. This canal, therefore, cannot be in the way of extraction of large stones. Its position renders it somewhat liable to be wounded in the medio-bilateral operation, it is true, but a little care on the part of the surgeon will prevent such an accident.

A considerable advantage of the medio-bilateral method is the small amount of hemorrhage. The incision is made through the least vascular portion of the perineum, and the operation may be finished in many instances with the loss of not more than a tablespoonful of blood. If the incision be carried too high, so as to wound the bulb, hemorrhage may be greater, but in every case it can be easily controlled.

The incision in the medio-bilateral operation possesses a marked advantage in opening up the shortest and most direct route to the bladder, thus facilitating the manipulation of instruments and the removal of stones.

The rapidity with which the medio-bilateral operation can be done by an experienced operator is an argument in its favor, though the necessity for quick operations does not now exist as before the age of anæsthesia. I have seen the operation completed in forty seconds, while lateral lithotomy, performed in my presence by one of the most skillful lithotomists in this country, required fifteen minutes for its completion.

Another strong argument in favor of the medio-bilateral operation is its low rate of mortality as compared with that furnished by other methods.

The operation is done as follows: The parts having been previously prepared and the bowel cleared out some hours before by an enema, the patient is anæsthetized and secured in the lithotomy position, the buttocks being brought down close to the end of the table. The grooved staff, the size of which is as large as the urethra will admit, is passed into the bladder and brought in contact with the stone. This instrument is then entrusted to an assistant, who is directed to draw it well up under the pubic arch and to hold it exactly

vertical and accurately in the median line. He is also to grasp the scrotum and draw it well up upon the staff so as to render the integument of the perineum tense and to elongate the membranous portion of the urethra as much as possible, thereby carrying the bulb further out of harm's way. The surgeon seats himself before the patient and introduces his left index finger into the rectum, so as to cause it to contract, and to draw it somewhat backward. A narrow, sharp-pointed knife is entered in the raphe, three or four lines anterior to the anus and pushed directly forward to the groove of the staff. It is then carried forward on the staff so as to open the membranous urethra to the extent of three or four lines. Withdrawing the knife, the incision of the superficial parts by a division of the raphe upwards to the extent of an inch and a half or two inches was effected.

Another method of operating is by dissection, an incision being made in the raphe, commencing an inch and a half above the anus and carried downwards to within a few lines of the anus. In the posterior part of this incision a careful dissection is made, successively dividing the tissues in the median line down to the staff, and the urethra opened. The beak of the cystotome is now introduced into the groove of the staff, passed along the staff into the bladder, disengaged and withdrawn open, so that its blades divide from within outward the deeper parts to the extent of three lines on each side. The finger is then carried along the staff into the bladder and the stone touched. The staff is then withdrawn. The wound is then slowly and gently, but fully dilated with the finger. A pair of light forceps is passed on the finger into the bladder, and the stone being grasped is drawn downward in the axis of the pelvis by gentle but firm traction. After the extraction of the stone, the bladder is thoroughly irrigated with an antiseptic solution. Then an india-rubber tube, a quarter of an inch in diameter, should be carried into the bladder through the wound and iodoform gauze packed loosely around it. The tube and packing should be removed in thirty-six or forty-eight hours. The wound usually heals rapidly, and in the majority of cases is entirely closed in ten days.

